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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/992,051	11/21/2001	Kevin M. Ferguson	7217 US	4466

30078 7590 07/01/2005
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EXAMINER

TRAN, TRANG U

ART UNIT	PAPER NUMBER
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2614

DATE MAILED: 07/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/992,051

Applicant(s)

FERGUSON, KEVIN M.

Examiner

Trang U. Tran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 November 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed Nov. 12, 2004 have been fully considered but they are not persuasive.

In re pages 2-3, applicant argues that Watson discloses a method of evaluating the visual quality of processed digital video sequences that incorporates a module of human visual sensitivity to predict the visibility of artifacts by comparing a reference video with a processed video, i.e., there are two input video sources while applicant's claimed invention is a method for rendering smooth interpolated video at a desired rate from a slower rate video source, i.e., there is only a single input video source; the sampler of Watson converts the three color channels of a video signal to a common spatial resolution, i.e., from 4:2:2 to 4:4:4 video, but does not up-sample a slower rate video to a desired rate, i.e., up-sampling from movie video at 24 frames/sec to NTSC video at 30 frames/sec as claimed by applicant; and the adaptive filtering claimed by applicant is for the purpose of providing interpolation of the up-sampled video, since there of necessity are repeat frames when the up-sampling occurs from a slower rate video to a higher rate video and this has nothing to do with the temporal filtering done by Watson to implement human sensitivity to different time frequencies for light-adapted (contrast) DCT coefficients.

In response, the examiner respectfully disagrees. First at all, it is noted that the claimed invention is directed to an apparatus for providing a smooth interpolated video signal at a desired rate from a slower rate video signal. The claimed invention **does not**

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limit to a single input video source and contains two different input video sources as taught by Watson.

Secondly, the claimed invention recites “**up-sampling the slower rate video signal to the desired rate**”. The claimed up-sampling is anticipated by the up-sampling of color components disclosed in col. 6, lines 44-67 because the up-sampling of Watson would increase the slower rate video signal to the desired rate.

Finally, the claimed “adaptively filtering the up-sampled slower rate video signal using a human vision model to produce the smooth interpolated video signal” is met by the time filter 42 of Watson because the time filter 42 has feedback loop (adaptive) to generate the smooth interpolated video signal based on the equations disclosed from col. 11, line 45 to col. 12, line 10.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-6 are rejected under 35 U.S.C. 102(e) as being anticipate by Watson (US Patent No. 6,493,023 B1).

In considering claim 1, Watson discloses all the claimed subject matter, note 1) the claimed means for up-sampling the slower rate video signal to the desired rate is

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met by the up-sampling 30 (Fig. 2, col. 6, lines 44-67), and 2) the claimed means for adaptively filtering the up-sampled slower rate video signal using a human visual model to produce the smooth interpolated video signal is met by the temporal filtering of the time filter 42 (Figs. 2 and 5, col. 11, line 37 to col. 12, line 60).

In considering claim 2, the claimed further comprising means for restoring a direct current level for the smooth interpolated video signal is met by the DCT thresholds which computes for each color and DCT frequency (Figs. 2 and 5, col. 12, lines 14-60).

Claims 3-4 are rejected for the same reason as discussed in claims 1-2, respectively.

Claims 5-6 are rejected for the same reason as discussed in claims 1 and 2, respectively.

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Trang U. Tran whose telephone number is (571) 272-7358. The examiner can normally be reached on 8:00 AM - 5:30 PM, Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John W. Miller can be reached on (571) 272-7353. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TT TT
June 21, 2005


JOHN MILLER
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600